CANADA

National Energy Board

Reasons for Decision

**Trans Québec &
Maritimes Pipeline Inc.**

RH-4-92

December 1992

Tolls

ERRATA

National Energy Board
Reasons for Decision
RH-4-92

December 1992

Reasons for Decision

In the matter of an application by Trans Québec & Maritimes Pipeline Inc. filed pursuant to Part IV of the *National Energy Board Act* for new tolls effective 1 January 1993 and 1 January 1994

1. Page 6, Table 3-2, Accumulated Depreciation, last column, "Authorized by the NEB", the figure (55,425) to be replaced by (155,425).

2. Page 15, bottom footer, RH-2-92 to be replaced by RH-4-92.

3. Page 15, bottom, last line delete "The Board is of the".

4. Page 16, top, first line, delete "DCF model while CAPP/APMC's witness uses a yearly version.".

National Energy Board

Reasons for Decision

Trans Québec & Maritimes Pipeline Inc.

Application dated 28 August 1992, as revised, for new tolls effective 1 January 1993 and 1 January 1994

RH-4-92

December 1992

Cat. No. NE22-1/1992-19E
ISBN 0-662-20269-4

This report is published separately
in both official languages.

Copies are available on request from:

Regulatory Support Office
National Energy Board
311 Sixth Avenue S.W.
Calgary, Alberta
T2P 3H2
(403) 292-4800
FAX: (403) 292-5503

Printed in Canada

Cat. No. NE22-1/1992-19F
ISBN 0-662-98037-9

Ce rapport est publié séparément
dans les deux langues officielles.

Exemplaires disponibles auprés du:

Bureau du soutien de la réglementation
Office national de l'énergie
311 6^{e} Avenue S.W.
Calgary, Alberta
T2P 3H2
(403) 292-4800
Télécopieur: (403) 292-5503

Imprimé au Canada

Recital, Appearances and Intervenors

IN THE MATTER OF the *National Energy Board Act* and the Regulations made thereunder; and

IN THE MATTER OF an application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls under Part IV of the *National Energy Board Act*, filed with the Board under File No. 4200-T28-5.

Examined by way of written submission and a public hearing held in Montréal, Québec, on 1, 2, 3 and 4 December 1992.

BEFORE:

J.-G. Fredette	Presiding Member
R. Priddle	Member
A. Côté-Verhaaf	Member

APPEARANCES AT THE PUBLIC HEARING:

Trans Québec & Maritimes Pipeline Inc.	L.-A. Leclerc
Canadian Association of Petroleum Producers	C. K. Yates
Foothills Pipe Lines Ltd.	H. N. E. Hobbs
Gaz Métropolitain, inc.	F. Hébert J. Bulger
Alberta Petroleum Marketing Commission	W. M. Moreland
Le Procureur général du Québec	J. Robitaille J. Brisson
National Energy Board	F. J. Morel D. Champagne

INTERVENORS TO HEARING ORDER RH-4-92:

Alberta Natural Gas Company Ltd

Alberta Petroleum Marketing Commission

Canadian Association of Petroleum Producers

Foothills Pipe Lines Ltd.

Gaz Métropolitain, inc.

NOVA Corporation of Alberta

Pan-Alberta Gas Ltd.

Le Procureur général du Québec

TransCanada PipeLines Limited

Union Gas Limited

Westcoast Energy Inc.

Western Gas Marketing Limited

Table of Contents

List of Appendices

Abbreviations

APMC	Alberta Petroleum Marketing Commission
Base Year	1 July 1991 to 30 June 1992
CAPM	Capital asset pricing model
CAPP	Canadian Association of Petroleum Producers
CPI	Consumer Price Index
DCF	Discounted cash flow
ECAPM	Empirical capital asset pricing model
Long-Canada	Long-term Government of Canada bond
NEB or the Board	National Energy Board
NOVA	NOVA Corporation of Alberta
O&M	Operating and maintenance
RH-2-90 TQM Reasons for Decision	"Natural Energy Board Reasons for Decision in the Matter of an application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls under Part IV of the National Energy Board Act", February 1991
RH-4-87 TQM Reasons for Decision	"National Energy Board Reasons for Decision in the Matter of an application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls under Part IV of the National Energy Board Act", November 1987
RH-4-83 TQM Reasons for Decision	"National Energy Board Reasons for Decision in the Matter of an Application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls under Sections 50, 51 and 52 of the National Energy Board Act", March 1984
RH-4-82 TQM Reasons for Decision	"National Energy Board Reasons for Decision in the Matter of an application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls and tariffs under Sections 50, 51, 52 and 52.2 of the Act", June 1983
ROE	Rate of Return on Equity
Test Years	1 January 1993 to 31 December 1993, and 1 January 1994 to 31 December 1994
The Act	*National Energy Board Act*
TQM or the Company	Trans Québec & Maritimes Pipeline Inc.
TransCanada or TCPL	TransCanada PipeLines Limited

Overview

(NOTE: This overview is provided solely for the convenience of the reader and does not constitute part of this Decision or the Reasons, to which readers are referred for the detailed text and tables.)

The Application

On 28 August 1992, Trans Québec & Maritimes Pipeline Inc. ("TQM" or "the Company") applied to the National Energy Board ("NEB" or "the Board") for new tolls to be effective 1 January 1993 and 1 January 1994. The Company requested approval of tolls that would decrease by 2.6 percent for 1993 and by a further 2.0 percent for 1994.

On 20 November 1992, TQM filed an update to its application which reflected changes in certain costs and further reduced its projected total cost of service for 1993 and 1994.

TQM initially requested a decrease in its rate of return on equity from 13.75 percent to 13.375 percent for 1993 followed by an increase to 13.50 percent for 1994.

During the course of the oral hearing, on 3 December 1992, TQM further amended its application and requested rates of return on equity of 13.125 percent for 1993 and of 13.25 percent for 1994, as a result of changes in the recommendations made by its expert witness on rate of return issues.

Board Procedure

The Board held an oral hearing on rate of return issues, dealt with all other issues by written submission and concluded the hearing with oral argument and reply on all issues.

Revenue Requirement

As a result of the 20 November 1992 updates to its application and the reduction in its applied-for rates of return on equity for 1993 and 1994, TQM forecasted decreases in its revenue requirements for both test years. The decrease in revenue requirement for 1993 as applied-for was approximately $2.4 million, or 3.1 percent from the $76.5 million previously approved by the Board for 1992. From 1993 to 1994, TQM's requested revenue requirements would have decreased by a further $1.4 million, or 1.9 percent.

The Board further reduced the revenue requirements as resquested by TQM by approximately $1.4 million for 1993 and by about $1.6 million for 1994, primarily as a result of reductions in the requested rate of return on equity and in the forecasted operating and maintenance expenses for both test years.

The requested and approved revenue requirements are summarized as follows:

	Requested	Approved
	($million)*	
1992		76.5
1993	74.1	72.7
1994	72.7	71.1

* rounded numbers

Capital Structure and Return on Equity

The Company requested a decrease in its rate of return on equity from the approved 1992 level of 13.75 percent to 13.125 percent and 13.25 percent for the 1993 and 1994 test years, respectively. The Board found a rate of 12.25 percent to be appropriate for both test years.

Toll

The Board's adjustments to the revenue requirements reduced TQM's requested monthly tolls by $0.114 million for 1993 to $6.058 million, and by $0.132 million to $5.926 million for 1994. The approved monthly toll for 1992 had been $6.379 million.

Background and Application

1.1 Background

Trans Québec & Maritimes Pipeline Inc. ("TQM" or "the Company"), a subsidiary of TransCanada PipeLines Limited ("TransCanada") and NOVA Corporation of Alberta ("NOVA"), operates a pipeline for the transmission of natural gas. The pipeline extends from the point of interconnection with the TransCanada system at St. Lazare, Québec, to a point just west of Québec City, a distance of approximately 298 kilometres. Natural gas is transmitted by TQM for TransCanada and delivered at the points of interconnection of the Company's pipeline with that of the distributor, Gaz Métropolitain, inc.

TransCanada is charged the entire toll determined by the National Energy Board ("NEB" or "the Board") to be just and reasonable in respect of transmission services rendered by TQM. Charges to TransCanada by TQM are, upon approval by the Board, included in TransCanada's cost of service as a component of "Transmission by Others". Thus, TQM's toll becomes an integral part of TransCanada's overall cost of transmission. The monthly toll charged by TQM in a year is one-twelfth of the revenue requirement approved by the Board for that year.

1.2 Application

On 28 August 1992, TQM applied under Part IV of the *National Energy Board Act* ("the Act") for orders to be effective on 1 January 1993 and 1 January 1994 fixing just and reasonable tolls that TQM might charge in those years for or in respect of the transmission of natural gas through its pipeline facilities and disallowing any existing tolls that would be inconsistent with tolls so fixed.

TQM proposed that, subject to the identification of any particular issue by intervenors which might be dealt with through a public hearing, the Board handle the application in a manner similar to that adopted in the proceeding pursuant to Order RH-2-90, in which all issues other than rate of return were dealt with by written submission.

TQM proposed tolls that conformed with the fixed-toll method of regulation set by the Board in the Company's first toll case pursuant to Order TG-2-83 and reaffirmed by orders arising out of subsequent toll cases.

1.3 Board Procedure

By Order RH-4-92 dated 14 September 1992, subsequently amended by Order AO-1-RH-4-92, the Board decided to hold an oral hearing on rate of return issues, to deal with all other issues by written submission and to conclude the hearing with oral argument and reply on all issues.

The hearing commenced in Montréal, Québec, on 1 December and concluded on 4 December 1992.

Revenue Requirement

TQM requested approval of revenue requirements of $74,064,000 for 1993 and $72,693,000 for 1994. The authorized revenue requirement for 1992 was $76,544,000. The proposed decrease of $2,480,000 in 1993 and the further decrease of $1,371,000 in 1994 were primarily the result of the reduction in the cost of service of provisions for return on rate base and NEB Cost Recovery.

Summaries of the revenue requirements as requested and approved for the test years ending 31 December 1993 and 31 December 1994, depicting the Board's adjustments, are shown in Tables 2-1 and 2-2, respectively. Details of the Board's adjustments to the test-year revenue requirements are provided in Chapters 3 to 6.

Table 2-1

Revenue Requirement for the 1993 Test Year
($000)

	Application as Revised	**NEB Adjustments**	**Authorized by NEB**
Operating Costs			
Operating and Maintenance	6,835	(116)	6,719
Municipal and Other Taxes	2,336	-	2,336
NEB Cost Recovery	489	-	489
Depreciation and Amortization	13,299	-	13,299
Income Taxes	9,744	(547)	9,197
	32,703	(663)	32,040
Return on Rate Base	41,541	(709)	40,832
Total Revenue Requirement	74,244	(1,372)	72,872
Storage Revenue	(180)	-	(180)
Net Revenue Requirement	**74,064**	**(1,372)**	**72,692**

Table 2-2

Revenue Requirement for the 1994 Test Year
($000)

	Application as Revised	NEB Adjustments	Authorized by NEB
Operating Costs			
Operating and Maintenance	7,340	(206)	7,134
Municipal and Other Taxes	2,368	-	2,368
NEB Cost Recovery	534	-	534
Depreciation and Amortization	13,326	-	13,326
Income Taxes	10,117	(598)	9,519
	33,685	(804)	32,881
Return on Rate Base	39,194	(776)	38,418
Total Revenue Requirement	72,879	(1,580)	71,299
Storage Revenue	(186)	-	(186)
Net Revenue Requirement	**72,693**	**(1,580)**	**71,113**

Rate Base

TQM requested approval of amounts for rate base of $321,777,000 for the 1993 test year and of $309,589,000 for the 1994 test year. The Board's adjustments to rate base for the 1993 and 1994 test years are summarized in Tables 3-1 and 3-2, respectively.

Table 3-1

Rate Base for the 1993 Test Year
($000)

	Application as Revised	**NEB Adjustments**	**Authorized by NEB**
Gas Plant in Service			
Gross Plant	472,338	-	472,338
Accumulated Depreciation	(142,193)	-	(142,193)
Net Plant	330,145	-	330,145
Working Capital	2,112	(9)	2,103
Tax Benefit on Sponsors' Development Costs	(11,207)	-	(11,207)
Unamortized Debt Issuance Costs	727	-	727
Total Rate Base	**321,777**	**(9)**	**321,768**

Table 3-2

Rate Base for the 1994 Test Year
($000)

	Application as Revised	**NEB Adjustments**	**Authorized by NEB**
Gas Plant in Service			
Gross Plant	472,771	-	472,771
Accumulated Depreciation	(155,425)	-	(55,425)
Net Plant	317,346	-	317,346
Working Capital	2,197	(17)	2,180
Tax Benefit on Sponsors' Development Costs	(10,772)	-	(10,772)
Unamortized Debt Issuance Costs	818	-	818
Total Rate Base	309,589	(17)	309,572

3.1 Gross Plant

TQM forecast its average gross plant in service to be $472,338,000 for the test year ending 31 December 1993 and $472,771,000 for the test year ending 31 December 1994. These amounts reflect the addition of plant approved by the Board under Part III of the Act.

Decision

The Board has reviewed the projected average gross plant in service amounts for the 1993 and 1994 test years of $472,338,000 and $472,771,000, respectively, and finds them reasonable for inclusion in rate base for those test years.

3.2 Working Capital

TQM calculated its working capital allowance in accordance with the methodology previously approved by the Board.

Decision

The Board has adjusted TQM's operating and maintenance ("O&M") expenses, as detailed in Chapter 6. These adjustments have caused the Board to reduce TQM's applied-for working capital as shown in Tables 3-1 and 3-2.

Depreciation and Amortization

4.1 Depreciation Rates

TQM's existing depreciation rates are summarized in Table 4-1. The Company has requested Board approval to continue using these rates for the 1993 and 1994 test years.

The majority of the existing rates were approved by the Board for the 1989 and 1990 test years following the filing by the Company of a depreciation study in July 1988. In RH-2-90, the Board approved the use of a rate of 20 percent for NEB Account 489, comprised entirely of TQM's data processing equipment.

Intervenors did not comment on TQM's depreciation rates.

Decision

The Board approves the continued use of the existing depreciation rates for all NEB accounts for the 1993 and 1994 test years.

Table 4-1

Depreciation Rates
(%)

NEB Account		TQM Existing Depreciation Rate
461	Land Rights	2.75
463	Measuring & Regulating Structures	2.80
464	Other Structures & Improvements	2.95
465	Mains	2.75
467	Measuring & Regulating Equipment	5.15
468	Communication Structures	10.00
482	Structures and Improvements	10.00
483	Office Furniture	7.00
484	Transportation	16.00
485	Heavy Duty Work Equipment	6.75
486	Tools and Work Equipment	7.00
489	Other Equipment - Data Processing	20.00

Chapter 5
Cost of Capital

TQM applied for a rate of return on common equity of 13.125 percent and 13.25 percent for the 1993 and 1994 test years, respectively, based on a deemed common equity component of 25 percent. The approved rate of return on equity for 1992 is 13.75 percent. Details of the applied-for capital structures and requested rates of return are shown in Tables 5-1 and 5-2 and are discussed in sections 5.1 to 5.3 of this chapter.

TQM's applied-for capitalizations for the 1993 and 1994 test years were determined in a manner consistent with the methodology approved in the Board's RH-2-90 TQM Reasons for Decision, namely: (i) the funded debt components reflected the Company's expected outstanding long-term debt balances during the test years and (ii) TQM's capitalizations were equated to a projected rate base. As well, the Company's capitalizations included an unfunded debt component as was the case in the Board's RH-2-90 TQM Reasons for Decision.

Table 5-1

Applied-For Deemed Average Capital Structure and Rates of Return for the 1993 Test Year

	Amount ($000)	Capital Structure (%)	Cost Rate (%)	Cost Component (%)
Debt - Funded	234,692	72.94	13.03	9.50
- Unfunded	6,641	2.06	6.50	.13
Total Debt Capital	241,333	75.00		9.63
Equity	80,444	25.00	**13.125**	3.28
Total Capitalization	**321,777**	**100.00**		
Rate of Return on Rate Base				**12.91**

Table 5-2

Applied-For Deemed Average Capital Structure and Rates of Return for the 1994 Test Year

	Amount ($000)	Capital Structure (%)	Cost Rate (%)	Cost Component (%)
Debt - Funded	223,769	72.28	12.66	9.15
- Unfunded	8,423	2.72	7.27	.20
Total Debt Capital	232,192	75.00		9.35
Equity	77,397	**25.00**	**13.25**	3.31
Total Capitalization	**309,589**	**100.00**		
Rate of Return on Rate Base				**12.66**

5.1 Capital Structure

TQM applied for a deemed capital structure consisting of 75 percent debt and 25 percent equity for both test years. These levels were consistent with the ratios approved in the past TQM hearings.

While noting that the Company had not requested a change to the deemed equity ratio in its capital structure in this proceeding, TQM's expert witness reiterated his views concerning the relatively-low common equity component of 25 percent. The witness' position was that the equity ratio should be increased to 30 percent, so as to improve the Company's bond rating and in order to preserve flexibility in accessing capital markets on favorable terms.

The expert witness for the Canadian Association of Petroleum Producers ("CAPP") and the Alberta Petroleum Marketing Commission ("APMC") concluded that the business risks of TQM had not increased since the last hearing and that the deemed common equity ratio of 25 percent continues to be consistent with those risks.

Decision

The Board approves the applied-for deemed capital structure of 75 percent debt and 25 percent equity for both test years.

5.2 Cost of Debt

5.2.1 Funded Debt

TQM's applied-for capitalizations included funded debt components of $234,692,000 and $223,769,000 for the 1993 and 1994 test years, respectively. The cost rate associated with these forecast long-term debt balances is 13.03 percent and 12.66 percent for test years 1993 and 1994, respectively. Consistent with the Board's directive as set out in its RH-4-87 TQM Reasons for Decision, the Company utilized the gross proceeds method to calculate the funded debt components of its capitalizations, as well as the associated cost rate. Under this methodology, the funded debt cost rate is calculated by dividing the financial charges, including the yearly amortization of debt issuance expenses, by the average gross proceeds of debt outstanding.

The Company's Series A and Series B bonds have been outstanding since 1984 and Series D bonds were issued in 1990. As such, the amounts of debt outstanding included in TQM's capitalizations, as well as the amounts of unamortized debt discount included in the 1993 test year rate base for these issues, were not questioned in this proceeding. The only funded debt matter raised during the hearing related to the Company's debt refinancing which is expected to take place in October 1994. TQM is expected to refinance its Series A and D bond issues (total of $155 million) with new bond issues Series E for $90 million at a coupon rate of 10.00 percent, Series F for $35 million at a coupon rate of 9.50 percent and a term loan of $30 million at the prime rate.

In arriving at the proposed coupon rates, TQM obtained an independent forecast for 1994 Canada Bonds from which TQM adopted a ten-year plus rate of 8.54 percent for Series E and a five to ten year rate of 8.16 percent for Series F. To this forecast, TQM added an estimate of the corporate bond issuance cost of 145 and 130 basis points for Series E and F, respectively, provided by TQM's broker who acted as underwriter for its last bond issue.

During cross-examination, TQM noted that for the issuance of these bonds, in 1994, other brokers will be invited to provide an indication as to the likely rates and term for these two issues. No intervenor objected to either the applied-for test year amounts of funded debt or the associated cost rates of 13.03 percent and 12.66 percent for the 1993 and 1994 test years, respectively.

Views of the Board

The Board is of the view that the determination of bond rates for Series E and F bonds is difficult given the current economic environment. The Board is of the opinion that the Company and the tollpayers should be protected from fluctuations in rates during the 1994 test-year through the implementation of a deferral account.

Decision

The Board approves the Company's applied-for funded debt amounts of $234,692,000 and $223,769,000 for the 1993 and 1994 test years, respectively, as well as the applied-for cost rates of 13.03 percent and 12.66 percent for the 1993 and 1994 test years, respectively.

The Board directs TQM to establish a deferral account to capture the variance between the approved and actual cost rates for Series E and F bonds for 1994. The Board also directs TQM to calculate carrying charges on amounts included in the deferral account using the approved rate of return on rate base for the 1994 test year.

5.2.2 Unfunded Debt

TQM applied for unfunded debt balances of $6,641,000 and $8,423,000 for the 1993 and 1994 test years. The applied-for cost rates are 6.50 percent for 1993 and 7.27 percent for 1994 test years. These rates reflect forecast average prime rates for the two test years, less 50 basis points except for the refinancing in October 1994, which is expected to be financed at the prime rate (i.e. the rate applicable to the Company's term loan referenced in section 5.2.1). TQM's costing of these forecast unfunded debt balances at the rate that equates to its short-term borrowing rate is consistent with the practice outlined in the Board's RH-2-90 TQM Reasons for Decision.

To arrive at its prime rate forecasts for the test years, TQM relied on the opinions of several independent forecasters. For 1993, the forecasts of average prime rate estimates ranged from 6.25 percent to 7.53 percent, with the average of all the forecasts being 7.0 percent. For the 1994 test year, the forecasts of average estimates ranged from 7.13 percent to 8.53 percent, with the average of all the forecasts being 7.75 percent. The Company adjusted these forecasts by 50 basis points including a minor adjustment for the expected refinancing in late October 1994 to 6.5 and 7.27 percent for the 1993 and 1994 test years, respectively. TQM's current short-term loans are with Montréal Trust at prime less 50 basis points. Montréal Trust, however, has advised the Company that the financing of the expected $30 million term loan will be at the then prevailing prime rate. Montréal Trust has indicated to TQM that substantial changes which have occurred in the financial market since the negotiation of the current term loan with TQM warrant the increase in the cost rate.

The CAPP/APMC expert witness during cross-examination commented that when the time comes to refinance the term-loan, TQM would most likely be able to negotiate better terms than the one indicated by Montréal Trust, unless lending conditions change considerably over the next two years.

Views of the Board

In the specific circumstances of TQM, the Board continues to believe that the Company's unfunded debt balances should be costed using its forecast short-term borrowing rates. The Board notes that the prime rate forecasts relied upon by TQM were not opposed by any party during the hearing. The Board is of the view that when TQM is in a position to refinance its short term loan in late 1994, it should explore all avenues in its negotiations including soliciting other financial institutions to obtain the most competitive rate.

As a result of adjustments made by the Board to the Company's rate bases for 1993 and 1994 (see sections 3.1 and 3.2), the Board has adjusted the amounts of unfunded debt to be included in the test year capitalizations.

> **Decision**
>
> **The Board approves unfunded debt cost rates of 6.50 percent for 1993 and 7.27 percent for 1994. The Board also approves unfunded debt balances for the 1993 and 1994 test years of $6,634,000 and $8,410,000, respectively.**

5.3 Rate of Return on Equity

TQM applied for a rate of return on equity ("ROE") of 13.125 percent for 1993 and 13.25 percent for 1994. These rates were supported by TQM's expert witness who relied on three techniques for determining a utility's appropriate ROE, namely comparable earnings, risk premium and discounted cash flow ("DCF"). The Company's witness updated several of his tests at the time of the hearing and the revisions are presented in these reasons.

TQM's expert witness provided a range for TQM's cost of equity using the comparable earnings test. The low end of his range, calculated using the average return for 17 low risk industrials from 1982 to 1991, was 12.78 percent. An upper end of the range was provided by using the average earnings for 12 low risk utilities. From 1982 to 1991, these earnings averaged 13.58 percent. The witness suggested that including 1992 earnings data in the 10 year average would further lower these figures due to the lingering recession.

TQM's expert witness provided four tests using the risk premium technique. The first test used a sample of six Canadian telephone utilities which were considered to be similar in risk to TQM. His analysis indicated that the risk premium, defined as the difference between the telephone utilities' cost of equity and the yield on "A+" rated utility bonds, calculated over the period 1980 to 1991 was 3.18 percent. When this risk premium is added to TQM's current cost of debt of 10.00 percent (calculated as the long-term Canada

bond yield of 8.75 percent plus 125 basis points) the resulting ROE is 13.18 percent. The telephone utilities' cost of equity was determined using the quarterly discounted cash flow model and adding in flotation costs.

The second risk premium test employed by TQM's expert witness used a sample of U.S. gas utilities contained in Moody's Gas Utility Index. The risk premium for the sample of U.S. utilities, defined as the difference between the gas utilities' cost of equity and the yield on "A" rated utility bonds, was found to be 3.39 percent over the period January 1984 to September 1992. When this risk premium is added to TQM's current cost of debt of 10.00 percent, the resulting ROE is 13.39 percent. The U.S. gas utilities' cost of equity was determined using the quarterly discounted cash flow model and adding in flotation costs. The witness justified the relevance of U.S. gas utilities in the Canadian context in the following manner: first, there are not enough undiversified, publicly traded gas utilities in Canada which can be used for comparison purposes; second, U.S. gas utilities provide a conservative benchmark on which to base equity costs given that long-term Canada bonds have yielded about 100 basis points more than their equivalents in the U.S.; third, independent analysts' forecasts for the long-term growth of U.S. utilities were available; and last, the increase in the degree of integration between Canadian and U.S. capital markets suggests that U.S. data are relevant to Canadian markets.

The third risk premium test employed by TQM's expert witness was the capital asset pricing model ("CAPM"). Employing an average adjusted beta of 0.55 and multiplying this by a market risk premium range of 6.0 to 7.0 percent, the estimate for TQM's equity risk premium is 3.30 to 3.85 percent. Adding this risk premium to a long-term Canada bond rate of 8.75 percent yields an ROE estimate for TQM of 12.05 to 12.60 percent. When flotation costs of 30 basis points are added to this, the ROE range yielded by the CAPM model is 12.35 to 12.90 percent. While the witness explained the need to add an allowance for flotation costs to a utility's ROE, no support was provided for such an allowance specifically for TQM. The market equity risk premium, used by TQM's expert witness, was arrived at by employing arithmetic means on the historical data.

The final risk premium method employed by TQM's expert witness was the Empirical CAPM ("ECAPM") test. The ECAPM test attempts to compensate for the CAPM's tendency to underestimate the equity cost for companies which have a beta of less than 1.0 and overestimate the equity cost for companies which have a beta greater than 1.0. By relaxing some of the more restrictive assumptions of the CAPM, the ECAPM provides, conceptually, a more valid result. Using a long-term bond yield of 8.75 percent, an average adjusted beta of 0.55 and a market risk premium of 6.0 to 7.0 percent, the resulting estimate for TQM's return on equity is 12.73 to 13.39 percent. When flotation costs of 30 basis points are added to this, the ROE range yielded by the ECAPM model is 13.03 to 13.69 percent.

Two tests utilizing the discounted cash flow ("DCF") technique were presented by TQM's expert witness. A quarterly version of the model is used. The first of these analyses was performed on a group of five relatively non-diversified Canadian telephone utilities. Relying on recent dividend yields and realized fifteen year growth rates in earnings for the sample companies used in the analysis, the witness concluded that the cost of equity

for these companies was 11.96 percent. If dividend growth estimates are used in place of earnings growth, the cost of equity for the telephone companies is 12.80 percent. When flotation costs are added in, the earnings and dividend growth based estimates are 12.33 and 13.17 percent, respectively.

The second DCF test presented by the witness used a group of 16 low risk industrials similar to that used in the comparable earnings test. Using recent dividend yields and realized fifteen year growth rates in earnings for the sample companies, the witness concluded that the cost of equity for these companies was 12.16 percent. If dividend growth estimates are used in place of earnings growth, the cost of equity for the low risk industrials is 12.66 percent. When flotation costs are added in, the earnings and dividend growth based estimates are 12.33 and 12.83 percent, respectively.

In his summary of results, TQM's expert witness provided a range and a midpoint for each of the seven tests employed. The average result for these seven tests was in the range of 12.77 percent to 13.25 percent with a midpoint of 13.01 percent. The witness removed the highest and lowest values from the upper and lower range of these seven tests, resulting in a truncated average of 12.73 percent to 13.25 percent with a midpoint of 13.02 percent. The witness concluded that an equity return in the range of 13.00 percent to 13.25 percent was reasonable for each test year.

The witness expressed the view that all of these tests should be given some weight absent any serious concerns about the theoretical merits of any given model. However, the witness placed comparatively less weight on the results of comparable earnings test than on the other six tests and rated it as his least preferred tests.

CAPP/APMC recommended a ROE of 11.50 percent to 11.75 percent for both test years. CAPP/APMC did not specify either end of the range but is implicitly recommending the midpoint.

CAPP/APMC's expert witness relied on two techniques in arriving at his final ROE recommendation: DCF and risk premium. In his first test, he applied the DCF methodology to a sample of 20 low-risk, non-utility industrials.. The dividend yield associated with his sample companies was 2.9 percent. The aggregate dividend growth rate was a range of 6.8 to 8.2 percent. CAPP/APMC's witness gave equal weight to the five, eight and ten year dividend growth rates of his sample companies. In this regard, he noted that the differences in the experienced inflation rates over the past five, eight and ten years were, in his view, very small. The same is true for their differences relative to the longer term prospective rate. When the dividend yield was added to the dividend growth rate range, the result was an investors' required ROE of 9.7 to 11.1 percent.

The witness made a downward adjustment to this result to reflect the lower risk of pure utilities relative to his low-risk industrials. He concluded that the requisite adjustment was in the range of 60 to 80 basis points. A downward adjustment of this magnitude resulted in an investors' required rate of return of approximately 10.25 to 10.50 percent. In his final recommendation. the witness did not rely on his DCF results. His reasoning

was that the risk premium test better reflected current market conditions than did the DCF test.

The second technique employed by CAPP/APMC's witness was the equity risk premium approach. In his pre-filed evidence, the witness employed a long-Canada rate of 8.25 to 8.75 percent. To this rate he added his estimate of the risk premium currently required by investors for the lowest risk utilities in his sample. He found the risk premium for such investments to be in the range of 2.0 to 2.3 percent. In arriving at his market risk premium CAPP/APMC's witness used the geometric mean. The resultant ROE range was 10.25 to 11.0 percent.

However, the witness concluded that the investors' required rate of return for TQM was 11.0 to 11.25 percent. This range included 25 basis points for what the witness saw as the unique risks of TQM. Allowing for the recent and prospective volatility in interest rates and the need for a margin of safety in his final result, the witness added 50 basis points to arrive at his final recommendation of 11.50 to 11.75 percent.

The results and recommendations of TQM's and CAPP/APMC's expert witnesses are summarized in Appendix II.

The Government of Québec recommended a rate of return on common equity for TQM of 11.75 percent for each of the 1993 and 1994 test years.

Views of the Board

While the Board has given consideration to all of the cost of equity estimation techniques employed in this proceeding, it has concerns with the manner in which these approaches were applied. As a consequence, some techniques were given less weight in the Board's decision than others. The risk premium techniques, were given the highest weight.

TQM's witness was alone in his use of the comparable earnings technique in this proceeding. While he conceded that this test was his least preferred, he nonetheless gave it equal weight among his seven tests. In ranking this test as his least preferred, TQM's witness acknowledged that the weaknesses of the comparable earnings test are that it relies on accounting data, and thus ignores the capital market and that these data cannot be corrected for inflation. In his application of this test for this proceeding, TQM's witness failed to adjust his comparable earnings results to account for the lower risk of utilities as compared to his low risk industrial group. This results in an upward bias to his ROE range. In addition, the comparable earnings results based on utilities suffers from the problem of circularity. For these reasons, the Board gave the comparable earnings result little weight in reaching its final decision. Despite methodological shortcomings, the Board considers the comparable earnings test to have some value as a crosscheck in determining the fairness of the return on equity for TQM's investors.

While both expert witnesses in this proceeding employed the DCF technique, they differed in their application. The first difference is that TQM's witness uses a quarterly DCF model while CAPP/APMC's witness uses a yearly version. The Board is of the

DCF model while CAPP/APMC's witness uses a yearly version. The Board is of the view that any slight distortion introduced in the yearly DCF model by timing differences between payment of dividends and receipt of revenues will be cancelled out by the opposing effects of these two variables. The Board therefore finds merit in the argument that a quarterly DCF model is not an appropriate method for determining the cost of capital for TQM. The second difference between the witnesses' application of the DCF technique was the period over which growth estimates were calculated. The CAPP/APMC's witness used an average of five, eight and ten years while TQM's witness used a term of fifteen years for his DCF analysis of telephone utilities and low risk industrials. The Board is of the view that in this hearing a fifteen year term for growth estimates may tend to overstate investor expectations since it includes data from a previous business cycle which experienced high inflation.

TQM's witness employed four versions of the risk premium technique. The witness included flotation costs in his estimate of the fair return on equity in all four versions. The company has never issued shares and has not indicated that it plans to issue any in the future. In light of this, the Board is of the view that an allowance for flotation costs is not warranted in TQM's case.

One of the risk premium tests employed by TQM's witness used the spread between the cost of equity capital for a sample of U.S. gas utilities and the yield on "A" rated utility bonds. The Board is of the view that TQM's witness failed to provide sufficient evidence to establish the similarity of risk between TQM and the sample group of U.S. gas utilities. For this reason, the Board gave this test a somewhat lower weight in its decision.

As was the case in the last TQM toll hearing, the issue of whether the market risk premium should be based on geometric or arithmetic means was discussed in some depth. The Board recognizes that in the context of different applications, there may be merit in relying on either geometric or arithmetic means. Furthermore, in view of the additional adjustments made to the test results, the Board cannot assess the merits of one approach over the other.

TQM's witness has used a long-term bond yield of 8.75 percent in his risk premium analyses and CAPP/APMC's witness used a range of 8.25 to 8.75 percent for his long Canada rate. The Board recognizes the difficulty in forecasting interest rates one to two years into the future. Given the significance of this variable in TQM's toll proceedings in particular, it would be helpful if additional supporting information of this issue was submitted in future TQM toll proceedings.

Having adjusted the results of the ROE estimation techniques presented by the expert witnesses for its various concerns, the Board is of the view that a rate of return on equity of 12.25 percent is reasonable. The Board is also of the view that no distinction between the return levels of the two test years is required.

Decision

The Board finds that a rate of return on common equity of 12.25 percent is fair and reasonable for both test years.

5.4 Rate of Return on Rate Base

Decision

The Board approves rates of return on rate base of 12.69 percent for 1993 and 12.41 percent for 1994. The approved capital structures and overall rates of return are shown in Tables 5-3 and 5-4.

Table 5-3

Approved Deemed Average Capital Structure and Rates of Return for 1993

	Amount ($000)	Capital Structure (%)	Cost Rate (%)	Cost Component (%)
Debt - Funded	234,692	72.94	13.03	9.50
- Unfunded	6,634	2.06	6.50	.13
Total Debt Capital	241,326	75.00		9.63
Equity	80,442	25.00	12.25	3.06
Total Capitalization	**321,768**	**100.00**		
Rate of Return on Rate Base				**12.69**

Table 5-4

Approved Deemed Average Capital Structure and Rates of Return for 1994

	Amount ($000)	Capital Structure (%)	Cost Rate (%)	Cost Component (%)
Debt - Funded	223,769	72.28	12.66	9.15
- Unfunded	8,410	2.72	7.27	.20
Total Debt Capital	232,179	75.00		9.35
Equity	77,393	**25.00**	**12.25**	3.06
Total Capitalization	309,572	100.00		
Rate of Return on Rate Base				**12.41**

5.5 Income Taxes

5.5.1 Flow-Through Tax Calculation

The Board decided in its RH-4-82 TQM Reasons for Decision that TQM's income tax provision should be calculated on a flow-through basis.

TQM included provisions for income taxes of $9,744,000 for 1993 and $10,117,000 for 1994 in its applied-for revenue requirements. Since certain decisions described in these Reasons affect the Company's calculation of income taxes provisions, the Board has recalculated them. The revised provisions are shown in Table 5-5.

Decision

The Board has adjusted the 1993 and 1994 flow-through income tax provisions from $9,744,000 to $9,197,000 and from $10,117,000 to $9,519,000, respectively, a reduction of $547,000 and $598,000 to reflect the decisions included in this report (see Table 5-5).

Table 5-5

Approved Utility Income Tax Allowance for the 1993 and 1994 Test Years
($000)

		1993	1994
Utility Income after Tax[1]		9,846	9,473
Add:	Depreciation	13,299	13,326
	Hearing Costs	108	109
	Account 0417 Meals & Lodging	89	92
	Account 5822 Social Activities	51	52
	LCT	634	612
		14,181	14,191
Deduct:	Interest A.F.U.D.C.	55	--
	80% of Account 0417	71	74
	80% of Account 5822	41	42
	Capital Cost Allowance	12,779	12,022
		12,946	12,138
Taxable Income		**11,081**	**11,526**
Taxes at 0.4359/(1-0.4359)		8,563	8,907
Add:	Recovery of LCT	634	612
Utility Income Tax Allowance, as Adjusted		**9,197**	**9,519**

1 Equals weighted average cost of equity multiplied by approved average rate base (1993: 3.06% x $321,768; 1994: 3.06% x $309,572).

Chapter 6

Operating Costs

6.1 Operating and Maintenance Expenses

6.1.1 Inflation

TQM estimated its O&M expenses excluding salaries and wages for the 1993 and 1994 test years by first adjusting the base-period amounts by its forecast rates of inflation, then specific adjustments were made for changes in activity. From the base period (i.e. 12 months ended 30 June 1992) to the 1993 test year, TQM used an increment of 3.42 percent, being .9 percent for the last half of 1992 (i.e. 1/2 of the annual rate of 1.8 percent) and 2.5 percent for 1993. The result plus the requested adjustment to activity for the 1993 test year was then inflated by 2.3 percent to estimate the 1994 test year amounts exclusive of activity. Specific adjustments were then made for expected changes in activity. In support of its inflation escalation factors, TQM relied on the Consumer Price Index ("CPI") inflation rate forecasts made by independent forecasters including the Conference Board of Canada and WEFA Group.

None of the intervenors commented on this issue.

Views of the Board

The Board notes that more recent forecasts of increases in the CPI for 1992, 1993 and 1994 are somewhat lower than those cited by TQM. Accordingly, the Board is of the view that escalation factors used by TQM should be adjusted downwards.

Decision

The Board approves an escalation rate of 2.3 percent for the 1993 test year and of 2.2 percent for the 1994 test year. For the purposes of adjusting the base period expenses for inflation in the last two quarters of 1992, the Board approves an escalation factor of 0.8 percent.

The effect of this decision is to reduce the applied-for Operating and Maintenance Expenses by $2,000 and $1,000 for the 1993 and 1994 test years, respectively.

6.1.2 O&M Expenses excluding Salaries

In response to a Board information request concerning the historical variances between what the Board allowed and what the Company spent on various O&M Expenses, TQM noted that it has managed to control inflation increases and has also developed and implemented initiatives which have reduced O&M expenses, which, in its view, is a proud achievement.

Intervenors did not comment on this issue.

Views of the Board

The Board is not convinced that TQM's forecasted O&M expenses are reliable in light of the fact that TQM has consistently overstated them as evidenced in the historical performance of the Company from 1987 to 1991. The Board is of the view that the overall percentage increase for expenses should be adjusted downwards from 1.5 percent to .7 percent for 1993 and from 4.2 percent to 2.1 percent for 1994.

Decision

The Board has reduced the applied-for O&M expenses excluding salaries by $21,000 for the 1993 test year and $64,000 for the 1994 test year.

6.1.3 Salaries

For estimating its salaries expense for the 1993 and 1994 test year, TQM provided for a staff complement of 59 permanent employees and an average of 2.5 temporary and seasonal employees. The Company stated that it was not seeking any increase in staff complement. The evidence shows that TQM's actual person years utilization in the base year was lower, however, the applied-for staffing level was the same as in June 1992.

For estimating the 1993 test year salaries, TQM escalated the base year salary expense by a compounded rate of 5.83 percent which reflected a 2.25 percent escalation for the last two quarters of 1992 plus a 3.5 percent escalation for 1993. The 2.25 percent increase represented half of the 4.5 percent salary escalation for the 1992 test year approved by the Board in RH-2-90 decision. For estimating 1994 salaries, TQM escalated the 1993 amount by 3.5 percent. The Company stated that the applied-for 3.5 percent salary increase for the 1993 and 1994 test years was inclusive of economic increase, merit, progression and promotion and was recommended by its payroll consultant.

The evidence shows that the Company's payroll consultant reviewed the results of Tower Perrin's survey of salary budget projections for 1993 and concluded that salary budget increases for 1993 will average 3.2 percent. Accordingly, for 1993, the consultant

recommended a 3.5 percent salary increase which included a 0.3 percent provision to allow recognition of individual growth and performance contribution through progression in the salary range. In respect to 1994, no survey results or other forecasts were available to support the applied-for 3.5 percent salary increase. The consultant compared inflation rate forecasts by a number of forecasters and concluded that projected increases in the Consumer Price Index ("CPI") for 1993 and 1994, were close. Assuming that salary movements in 1994 will track inflation, the consultant recommended a salary increase of 3.5 percent also for 1994.

Views of the Board

TQM filed a toll application for two test years. It is expected that forecasts of inflation and salary increases for the second test year would have larger forecasting errors as turned out to be the case for 1992. In its RH-2-90 decision, based on the consensus forecast, the Board found that a 4.2 percent inflation rate for 1992 was reasonable. The Board also approved an overall salary escalation of 4.5 percent for the 1992 test year. In actual fact, the inflation rate for 1992 is lower than 2 percent, thus significantly lower than forecasted in RH-2-90. In parallel with the drop in inflation rate, salary increases for 1992 awarded in all sectors of the economy have been much lower than the 4.5 percent approved for TQM.

The Board has considered salary increases awarded for 1992, including those approved by the Board for other pipelines. The Board is of the view that for the purposes of adjusting the base year salaries for inflation in the last two quarters of 1992, an escalation rate of 1 percent is reasonable.

In respect of planned salary increases for 1993, the Board takes note of the Conference Board of Canada's annual compensation survey "Compensation Planning Outlook 1993" which indicates that the average salary increase for 1993 is expected to be significantly lower than the applied-for 3.5 percent. The Board has concluded that for 1993, an overall 2.0 percent increase is reasonable.

Given that information regarding possible salary increases in 1994 is not yet available, the Board is prepared to accept the assumption that salary movement in 1994 will track the movement in the CPI, as being reasonable. Accordingly, given that forecast increases in the CPI for 1993 and 1994 are about the same, it is the Board's view that the salary increase for 1994 should be the same as approved for 1993.

Decision

The Board approves an overall salary increase of 2.0 percent for the 1993 and 1994 test years. For the purpose of adjusting base year salaries, before applying the 2 percent increase for 1993, an escalation factor of 1 percent is reasonable.

As a result of the Board decision, applied-for salaries for the 1993 and 1994 test years have been reduced by $93,000 and $141,000, respectively.

6.1.4 Summary of O&M Expenses

Table 6-1 summarizes the adjustments made by the Board to TQM's requested O&M expense amounts. These adjustments are explained in the preceding paragraphs of this chapter.

Table 6-1

Summary of O&M Adjustments
($000)

	1993	**1994**
Total O&M Expenses - requested	6,835	7,340
Adjustments:		
Inflation Escalation	(2)	(1)
O&M Expenses	(21)	(64)
Salaries and Wages and Benefits	(93)	(141)
Total Adjustments	(116)	(206)
Total O&M Expenses - approved	**6,719**	**7,134**

Deferral Accounts

7.1 Disposition of Existing Deferral Accounts

TQM proposed in its application to dispose of the balances accumulated as at December 31, 1992 in the following accounts:

a) deferral account approved in RH-2-90 to record the variance between the approved and actual cost rates of unfunded debt for 1991 and 1992;

b) deferral account approved in RH-2-90 to record the differences between forecast and actual NEB Cost Recovery charges for 1991 and 1992; and

c) deferral account approved with the release of Order No. XGM-35-91 on September 12, 1991 to account for the investment expenses of the Applicant related to the Deschambault Meter Station.

Decision

The Board approves the disposition of the currently approved deferral accounts for the cost rates of unfunded debt, NEB Cost Recovery charges and expenses related to the Deschambault Meter Station.

7.2 Continuation of Existing Deferral Accounts

TQM requested that the currently approved deferral accounts listed below be continued:

a) cost rates of unfunded debt to record variance between approved and actual cost rates of unfunded debt for 1993 and 1994; and

b) NEB Cost Recovery to record the difference between forecast and actual charges for 1993 and 1994.

Decision

The Board approves the continuation of the deferral accounts specified by TQM for renewal.

7.3 New Deferral Account

As indicated in Section 5.2.1 of these Reasons, a deferral account in respect of the variance between the approved and actual cost rates for Series E and F bonds for 1994, is established.

Chapter 8
Tariff Matters

TQM applied for monthly tolls of $6,172,000 and $6,058,000 for the 1993 and 1994 test years, respectively. The Company determined these tolls in conformity with the fixed-toll method of regulation established by the Board in TQM's first toll case in 1983. The monthly toll proposed by TQM is one-twelfth of the annual revenue requirement for each of the two test years. The requested and approved revenue requirements for the 1993 and 1994 test years are shown in these Reasons for Decision in Tables 2-1 and 2-2, respectively.

Views of the Board

As in previous decisions, the Board considers the fixed-toll methodology to be appropriate for TQM. The Board has adjusted various components of the Company's requested revenue requirements, as described in preceding chapters of these Reasons for Decision. Total approved revenue requirements of $72,692,000 for 1993 and $71,113,000 for 1994 have resulted from these proceedings.

Decision

The Board approves monthly tolls of $6,058,000 for 1993 and $5,926,000 for 1994.

Disposition

The foregoing chapters, together with Board Order TG-10-92, constitute our Reasons for Decision and our Decision in this matter.

J.-G. Fredette
Presiding Member

R. Priddle
Member

A. Côté-Verhaaf
Member

Calgary, Alberta
December 1992

IN THE MATTER OF THE *NATIONAL ENERGY BOARD ACT* ("the Act") and the Regulations made thereunder;

AND IN THE MATTER OF an application by Trans Québec & Maritimes Pipeline Inc. ("TQM") for certain orders respecting tolls and tariffs made under sections 59, 60 and 65 of the Act filed with the National Energy Board ("the Board") under File No. 4200-T28-5.

BEFORE the Board, on 15 December 1992.

WHEREAS by application dated 28 August 1992, as revised, TQM sought approval by the Board, effective 1 January 1993 and 1 January 1994, of fixed transportation tolls for transmission of natural gas through its pipeline facilities;

AND WHEREAS by Order TG-3-91, dated February 1991, the Board ordered TQM to charge, in respect of the transportation service provided to TransCanada PipeLines Limited ("TransCanada"), a monthly toll for the 1991 test year of $6.191 million commencing 1 January 1991 and for the 1992 test year of $6.379 million commencing 1 January 1992;

AND WHEREAS pursuant to Order RH-4-92 the Board examined and heard the written and oral evidence of TQM and all interested parties with respect to the said application;

THEREFORE IT IS ORDERED THAT:

1. For accounting, toll-making and tariff purposes, TQM shall implement procedures conforming to the Board's decisions outlined in the RH-4-92 Reasons for Decision and with this Order.

2. TQM shall charge, in respect of its transportation service provided to TransCanada, a monthly toll of $6,058,000 commencing 1 January 1993 and a monthly toll of $5,926,000 commencing 1 January 1994.

3. TQM shall charge Gas Métropolitain, inc. ("GMi"), in respect of storage services, a toll based upon the TS-GMi tariff attached to the Transportation and Storage Service Contract dated 17 March 1987, as amended, filed with the Board under covering letter dated 10 April 1987.

4. TQM shall charge GMi, in respect of storage gas transportation services, a toll based upon the STS-GMi tariff attached to the Storage Gas Transportation Service Contract dated 13 February 1990, as amended, filed with the Board under covering letter dated 20 February 1990.

5. TQM shall file with the Board and serve upon all interested parties to the proceedings held pursuant to Order RH-4-92, gas transportation tariffs incorporating the tolls set out in paragraph 2 of this order.

6. Those provisions of TQM's tariffs and tolls or any portion thereof that are contrary to the RH-4-92 Reasons for Decisions or this Order are disallowed after 31 December 1992.

NATIONAL ENERGY BOARD

J.S. Richardson
Secretary

Required Rate of Return on Equity
Recommendations of Expert Witnesses

TQM

(i) Comparable Earnings	(%)
Low risk industrials sample results for 1982-1991	12.78
Regulated utilities sample results for 1982-1991	13.58
Midpoint	13.18

(ii) DCF

	Telephone Utilities (%)	Low-risk Industrials (%)
Dividend Yield[1]	6.60-6.64	3.10-3.13
Growth Component	5.08-5.85	8.93-9.39
	11.68-12.59	12.03-12.52
Add: Flotation Cost Allowance[2]	.65- .58	.30 - .31
Fair Return Range	12.33-13.17	12.33-12.83
Midpoint of fair return	12.75	12.58

CAPP/APMC

(i) Comparable Earnings

N/A

(ii) DCF[3]	(%)
Dividend yield for low risk industrials	2.9
Implicit Growth Component	8.2[4]
Required rate of return for sample of low risk industrials	11.0
Less: Adjustment to reflect lower risk of pure utilities relative to industrial sample	.60- .80
	10.25-10.50

1 Exhibit B-25, pages 1-2 of Exhibit RAM 10, pages 1-2 of Exhibit RAM 11;
2 Approximate implicit flotation cost allowance;
3 CAPP/APMC witness did not place any weight on the result of this test;
4 Exhibit C-1-4, page 43.

TQM		CAPP/APMC	
(iii) Risk Premium	(%)	(iii) Risk Premium	(%)
a) Equity Risk Premium		Equity risk premium for the market as a whole	4.0-4.5
Long-Canada Rate	8.75	Times: Adjustment factor for lower risk of pure utilities	.50
Add: Corporate Issuance spread	1.25	Equity risk premium for utilities	2.0-2.3
Cost of long-term debt to TQM	10.00	Long-term Canada rate	8.25-8.75
Risk premium relative to A+ rated telephone companies for the years 1980-1991	3.18		10.25-11.00
	13.18	Add: Adjustment to reflect unique risks of TQM	.25- .75
			11.0-11.25

b) Risk Premium U.S. Gas Utilities

	(%)
Long-term Canada rate	8.75
Corporate Issuance spread	1.25
Cost of long-term debt to TQM	10.00
Average risk premium over A-rated utility bonds	3.29
	13.29

TQM

c) <u>CAPM/ECAPM</u>

	CAPM (%)	ECAPM (%)
Risk Premium-market as a whole	6.0-7.0	6.0-7.0
Adjustment factor for lower risk of TQM	0.55	0.6633
	3.3-3.85	3.98-4.64
Long-term Canada rate	8.75	8.75
	12.05-12.60	12.73-13.39
Add: Flotation cost Adjustment	0.30	0.30
Cost of equity range	12.35-12.90	13.03-13.69
Midpoint of cost of equity range	12.63	13.36

(iv) <u>Final Recommendation</u>

	(%)
Average of seven test results	12.77-13.25[5]
Average of remaining tests results after removing high and low estimates (i.e. 12.33 and 13.58%)	12.73-13.25
Final Recommendation	13.00-13.25[6]

CAPP/APMC

(vi) <u>Final ROE Recommendation</u>

	(%)
Return on equity for equity risk premium test	11.00-11.25[7]
Add: Cushion for market uncertainties	0.50[8]
Final ROE Recommendation	11.50-11.75

5 Exhibit B-25;
6 Exhibit B-4, page 49 as corrected at TR. 75;
7 Exhibit C-1-4, page 62;
8 Exhibit C-1-4, page 10.